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REMARKS

Claims 1-19 are pending. By this Amendment, the specification is amended and claim 19 is amended. Reconsideration in view of the above amendments and following remarks is respectfully requested.

Claims 1-7 were rejected under 35 U.S.C. §102(b) over Holzer et al. (U.S. Patent 6,132,676). The rejection is respectfully traversed.

Claim 1 recites a method of manufacturing a component that will, in use, experience a thermal load and will be operated at a mean operating temperature. The method includes selecting a material having a coefficient of thermal expansion having a zero-crossing at a first temperature and manufacturing the component using the selected material at a second temperature. The first temperature is between the second temperature and the mean operating temperature, so as to minimize deformation of the component at the mean operating temperature.

Holzer et al. disclose a metal/ceramic composite, more particularly a composite having a low or zero coefficient of thermal expansion and high thermal conductivity made of a discontinuous, negative thermal coefficient ceramic in continuous metal matrix. As shown in Figure 2, the composite material is formed by providing a plurality of coated particles in a container 20. Each of the plurality of particles includes a core 40 formed of the first component that can undergo a disadvantageous phase transformation or decomposition upon application of a threshold pressure from a press 32. Each core 40 is coated by a second component 42. Application of force from the press 32 results in compaction to form a relatively dense composite article including a discontinuous phase defined by separate particles of the first component, defined by the core portions 40, dispersed within a continuous phase of the second component formed from the densification of the coating layers 42.

The Office Action on page 2, alleges that Holzer et al. disclose a component that would experience a thermal load and will be operated at mean operating temperature in column 5, lines 38-49. It is respectfully submitted, however, that Holzer et al. do not disclose or suggest a component that will experience a thermal load and will be operated at a mean operating temperature, as recited in claim 1. What Holzer et al. disclose in column 5, lines 38-49, is that low CTE materials, or ultra low CTE materials, typically have poor thermal conductivities. Holzer et al. also disclose that CTE's typically are temperature dependent and CTE properties do not necessarily extend over wide temperature ranges. Holzer et al. do not

disclose or suggest manufacturing a component that will a experience a thermal load and will be operated at a mean operating temperature.

It is also respectfully submitted that Holzer et al. do not disclose or suggest selecting a material having a coefficient of thermal expansion having a zero-crossing at a first temperature. It is first respectfully noted that what Hozler et al. disclose is the formation of a composite material which is formed from the application of pressure to particles formed of two components, the core 40 and the coating 42. In other words, Hozler et al. disclose selecting two materials and applying pressure to produce a composite material formed of the two materials.

The Office Action also alleges on page 2 that Holzer et al. disclose selecting a material having a coefficient of thermal expansion having a zero-crossing at a first temperature and manufacturing the component using the selected material at a second temperature, wherein the first temperature is between the second temperature and the mean operating temperature, so as to minimize deformation of the component at the mean operating temperature in Figure 5 and column 9, lines 18-59. It is respectfully submitted, however, that Holzer et al. do not disclose or suggest these claimed features. It is first respectfully submitted that Holzer et al. do not disclose or suggest manufacturing a component using a selected material at a second temperature. As discussed above, what Holzer et al. disclose is manufacturing a component using two selected materials to form a composite material formed of the two component materials. In addition, although Holzer et al. disclose in column 6, lines 13-16, that the composite can be formed by subjecting the coated particles to pressure, temperature, or a combination, there is no disclosure or suggestion that the temperature at which Holzer et al. forms the composite material is a second temperature, wherein a first temperature at which the coefficient of thermal expansion has a zero-crossing is between the second temperature and a mean operating temperature of the component. As also discussed above, Holzer et al. make no mention of a mean operating temperature of a component formed of their composite material.

It is also respectfully submitted that Figure 5 and column 9, lines 18-59 of Holzer et al. do not disclose or suggest a first temperature at which a coefficient of thermal expansion has a zero-crossing. What is shown in Figure 5 of Holzer et al. is the relationship between the coefficient of thermal expansion of the composite material and the thermal conductivity of the resulting composite material. In other words, the horizontal axis of Figure 5 is clearly the thermal conductivity of the composite material, not a temperature at which the coefficient

of thermal expansion crosses zero. What Holzer et al. disclose in column 9, lines 18-59, is the advantageous overall combination of the coefficient of thermal expansion and thermal conductivity when combining metals, preferably copper, silver or a combination, with ceramics.

With respect to the allegation on page 2 of the Office Action that: "Holzer discloses the material having a low coefficient of thermal expansion having a substantially zero coefficient of thermal expansion (abstract)," it is respectfully submitted that Applicant is not claiming a material having a substantially zero coefficient of thermal expansion. Claim 1 recites selecting a material having a coefficient of thermal expansion having a zero-crossing at a first temperature. Claim 1 does not recite a component having a substantially zero coefficient of thermal expansion.

As Holzer et al. do not disclose or suggest each and every feature of claim 1, it is respectfully submitted that Holzer et al. fails to present a *prima facie* case of anticipation.

Claims 2-7 recite additional features of the invention and are allowable for the same reasons discussed above with respect to claim 1 and for the additional features recited therein.

Reconsideration and withdrawal of the rejection of claims 1-7 over Holzer et al. are respectfully requested.

Claims 8-19 were rejected under 35 U.S.C. §103(a) over Davis, Jr. et al. (U.S. Patent 6,465,272) in view of Holzer et al. The rejection is respectfully traversed.

Claim 8 recites a component for use in a lithographic apparatus. The apparatus is configured to project a pattern beam of radiation onto a target portion of a substrate. The component is made of a material having a coefficient of thermal expansion having a zero-crossing at a first temperature between a second temperature at which the component manufactured and a mean operating temperature of the component.

As acknowledged on page 3, lines 12-14, Davis, Jr. et al. do not disclose a component made of a material having a coefficient of thermal expansion having a zero-crossing at a first temperature between a second temperature at which the component is manufactured and a mean operating temperature of the component.

It is respectfully submitted that Holzer et al fails to cure the deficiencies of Davis, Jr. et al. with respect to claim 8. In particular, as discussed above, Hozer et al. also do not disclose or suggest a component made of a material having a coefficient of thermal expansion having a zero-crossing at a first temperature between a second temperature at which the component is manufactured and a mean operating temperature of the component.

Accordingly, the combination of Davis, Jr. et al. and Hozler et al. fails to include all the limitations of claim 8 and fails to present a *prima facie* of obviousness.

Claims 9-17 recite additional features of the invention and are allowable for the same reasons discussed above with respect to claim 8 and for the additional features recited therein.

Claim 18 recites a lithographic apparatus including, *inter alia*, at least one component in the apparatus that in use experiences a thermal load made of a low coefficient of thermal expansion material having a coefficient of thermal expansion having a zero-crossing at a temperature between mean manufacturing temperature and a mean operating temperature of the at least one component.

As discussed above, the combination of Davis, Jr. et al. and Holzer et al. fails to include, at least, this limitation of claim 18. Accordingly, the combination fails to present a *prima facie* case of obviousness.

Claim 19 recites a device manufacturing method including, *inter alia*, providing a beam of radiation using a radiation system and projecting a patterned beam of radiation onto a target portion of a layer of radiation-sensitive material, at least partially covering a substrate using a projection system. At least one component in at least one of the radiation system and projection system experiences a thermal load at mean operating temperature and is made of a low coefficient of thermal expansion material such that a coefficient of thermal expansion zero-crossing of the material is between manufacturing temperature of the at least one component and the mean operating temperature.

As discussed above, the combination of Davis, Jr. et al. and Holzer et al. fails to include a component made of material such that a coefficient of thermal expansion zero-crossing temperature of the material is between a manufacturing temperature and a mean operating temperature. Accordingly, the combination fails to present a *prima facie* case of obviousness.

Reconsideration and withdrawal of the rejection of claims 8-19 over Davis, Jr. et al. in view of Hozler et al. are respectfully requested.

In view of the above amendments and remarks, Applicant respectfully submits that all the claims are allowable and that the entire application is in condition for allowance.

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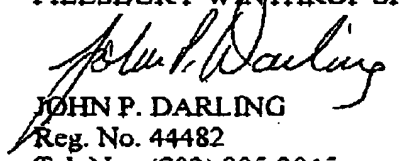
Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,
PILLSBURY WINTHROP SHAW PITTMAN LLP



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